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"PATENT"**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appl. No. : 09/770,960 Confirmation No.: 7021
Applicant : Jo Ann H. SQUIER, *et al.*
Filed : January 26, 2001
TC/A.U. : 1772
Title: : "CAVITATED LABELS FOR USE WITH COLD GLUE"
Examiner : Catherine A. SIMONE
Docket No. : 10247
Customer No. : 23455

DECLARATION UNDER 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, JoAnn H. Squier, hereby declare and state:

THAT I am a citizen of United States;

THAT I have received the degree of Bachelor of Science in Chemistry from State University Of New York at Potsdam;

THAT I have been employed by ExxonMobil Chemical Films Business since 1971, where I hold a position as Senior Development Engineer, with responsibility for research and new product development;

THAT I am a co-inventor of the invention disclosed in the present application; and

THAT I am familiar with the prosecution of the present application, including the non-final Office Action mailed August 25, 2004, which I have closely reviewed.

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Characteristics and Advantages of the Claimed Invention

Applications for cold glue patch labels have traditionally used paper, which is a highly absorbent or breathable substrate. A highly absorbent, breathable substrate is required for the cold glue water-based adhesives due to the nature of the process, which uses a high water content adhesive at the moment of application. Rapid absorption of water is critical as the wet adhesive is applied to the label, which is then applied to the container. The adhesive slowly dries over time, (up to two weeks) forming a strong bond to the container, but there has to be sufficient absorption so that the label when applied to a bottle initially adheres to the container immediately upon application, as labels are applied at high speed. In addition, a paper label when removed from the bottle desirably exhibits fiber "delamination" or "fiber tear," leaving a paper-layer still adhered to the bottle.

The claimed labels are paper substitutes. Like a paper label, the claimed labels provide good initial adhesion and fiber tear. However, the claimed labels have an advantage over paper in their gloss. The non-cavitated second skin layer of the claimed invention provides a desirable glossy appearance.

The claimed labels demonstrate good initial adhesion due to their highly cavitated film structure. Specifically, over half of the layers of the claimed labels are cavitated (3 out of the 4 required layers in Claim 1, and 3 out of the 5 required layers in Claim 8). In fact, certain embodiments of the invention benefit from being over 85% cavitated.

Through experimentation, we learned that it is critical for the glue-receiving layer to be cavitated. Examples 6 and 9 in the specification, which did not contain a cavitated cold glue-

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receiving layer exhibited no fiber tear and poor initial adhesion. However, we also learned that films made with thin (15% of total structure) cavitated skins (also, see my discussion of Dronzek, below) do not display the high absorbency that is required. Therefore, in the claimed labels, the three layers closest to the cold glue (the first skin layer, first tie layer and core layer) are each cavitated.

An unforeseen advantage of the claimed invention is that it provides a film structure that provides maximum flexibility for the elimination of "plate-out."

Plate-out is when the cavitating agent of a layer detaches from the polymer matrix and builds up on processing equipment. Generally, the higher the loading of cavitating agent in a particular layer, the more severe the degree of plate-out.

By providing a structure with at least three cavitated layers, labels according to the invention are still highly cavitated (that is, a large percentage of the film structure is made up of cavitated layers) without the need for any one individual layer to have a particularly high cavitating agent loading level.

I now provide the following comments on the primary references cited in the Office Action.

Duncan (US '369)

The Duncan patent discloses a cavitated skin, but it also discloses a non-absorbent core layer.

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Swan (US '123)

In the Swan patent, a cavitated core, a non-cavitated tie and a cavitated skin layer are disclosed for use with a pressure-sensitive adhesive.

While pressure-sensitive adhesives may be water-based, the label application is done in multiple steps. A pressure-sensitive adhesive is applied to a substrate, where it is DRIED on the substrate. The residual left is tacky, so this is then laminated to a release liner. The label is then separated from the liner for application to a container. Because a pressure-sensitive adhesive is sticky after drying, it adheres to a container.

The cavitated skin in Swan may be receptive to water, but the level of absorption needed for a pressure-sensitive application where the adhesive is dried is different from what is required for a cold glue patch label application. Similarly, cold seal adhesives may be water-based, but are dried during processing before being used on their final application.

Dronzek (US '664)

The films of Dronzek have a thin cavitated glue-receiving layer which would be expected by one of ordinary skill in the art to have inadequate fiber tear and poor initial adhesion. For this reason, Dronzek discloses the solution of adding a hydroscopic coating for glue receptivity to gain initial adhesion.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are

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punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: Nov. 22, 2004

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